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BOSTON SOCIETY OF CIVIL ENGINEERS
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PROCEEDINGS

PAPER IN THIS NUMBER.

"Federal Water-Power Legislation." G. C. Danforth.

MINUTES OF MEETING.

BOSTON, October 19, 1921. — A regular meeting of the Boston Society of Civil Engineers was held this evening in Chipman Hall, Tremont Temple, and was called to order at eight o'clock by the President, Robert Spurr Weston.

There were 34 members and guests present.

The minutes of the meeting of September 21 were read and approved.

The President announced that the Board of Government had elected the following to membership in the grade named:

Members — Messrs. Fred S. Brennan and James Henry Manning.

The President announced the deaths of the following members: Mr. Charles E. Haberstroh, who died September 25, 1921, and Mr. Hiram Francis Mills, who died October 4, 1921; and it was voted that the President be authorized to appoint committees to prepare memoirs of the deceased members.

On motion of Past President Swain it was voted that the Board of Government be authorized to use the income from the Permanent Fund to meet current expenses to such an extent as they deemed necessary.

The President then introduced the speaker of the evening, Major George C. Danforth, chief engineer of the Maine Water Power Commission, who spoke on the Federal Water-Power Act.

The paper was discussed by Past President Swain, Past President Hale, Colonel Gunby and Mr. H. K. Barrows.

On conclusion of the discussion, on motion of Past President Swain it was voted:

"That the Society approve the formulation of resolutions providing for the amendment of the Federal Water-Power Act and that the draft of the resolutions be referred to a committee of five to be appointed by the President."

The President subsequently appointed the following as members of the committee: Mr. George C. Danforth, Mr. Richard A. Hale, Mr. Harold K. Barrows, Mr. William F. Uhl and Mr. James H. Manning.

Adjourned.

RICHARD K. HALE, *Acting Secretary.*

APPLICATIONS FOR MEMBERSHIP.

[November 15, 1921.]

THE By-Laws provide that the Board of Government shall consider applications for membership with reference to the eligibility of each candidate for admission and shall determine the proper grade of membership to which he is entitled.

The Board must depend largely upon the members of the Society for the information which will enable it to arrive at a just conclusion. Every member is therefore urged to communicate promptly any facts in relation to the personal character or professional reputation and experience of the candidates which will assist the Board in its consideration. Communications relating to applicants are considered by the Board as strictly confidential.

The fact that applicants give the names of certain members as reference does not necessarily mean that such members endorse the candidate.

The Board of Government will not consider applications until the expiration of twenty (20) days from the date given.

CLARK, ELDON SAUNDERS, Boston, Mass. (Age 33, b. Boston, Mass.) Graduate of Mass. Inst. of Technology, civil engineering course, in 1910. Was assistant at M. I. T., 1910-11; with Barrows and Breed, 1911-14; with Power Construction Co., 1914; with Clark & Gow, 1915; with Stone & Webster, Inc., and Shipbuilding Corporation, 1916-21; with Metcalf & Eddy from March, 1921, to date, as assistant engineer along sewage disposal and water supply lines. Refers to L. S. Cowles, F. A. Marston, E. F. Rockwood, A. L. Shaw and J. P. Wentworth.

HEALD, HAROLD FRANCIS, Somerville, Mass. (Age 27, b. Boston, Mass.) Educated at Somerville High School, Y. M. C. A. Engineering School. From Jan., 1915, to Oct., same year, was with J. L. Woodfall; from Oct., 1915, to Feb., 1917, studied at Tufts College Engineering School; April, 1916, to Sept., 1916, in the engineering department, City of Medford; Feb. to June, 1917, attended Bates College; June, 1917, to Aug., 1919, was in the army, Co. C., 101st Engineers; Feb. to June, 1919, attended University de Caen, Normandy, France; Sept., 1919, to June, 1920, at Tufts College; June, 1920, to March, 1921, assistant engineer, Dept. of Public Works, Dominican Republic; March, 1921, to June, same year, Tufts College Engineering School; June, 1921, to date, engaged in his own building construction. Refers to R. Abbott, F. T. Flynn, R. F. Macauley, D. P. Steward, Jr., J. L. Woodfall and W. A. Woods.

JACKSON, KARL FREDERICK, Newtonville, Mass. (Age 26, b. Springfield, Mass.) Graduated from Harvard University in 1917, having specialized in engineering sciences. From May, 1917, to May, 1919, served in the U. S. Army, Corps of Engineers, also with 101st U. S. Engineers, 26th Division. From June, 1919, to November, same year, with the Witherow Steel Co., Pittsburg, as concrete detailer; November, 1919, to June, 1920, with Lockwood, Greene & Co. as designing engineer of construction; from June, 1920, to the present time, with the Republic Fireproofing Co., Inc., as sales engineer and district manager. Refers to W. W. Bigelow, J. E. Hanlon, E. A. Norwood and J. F. Osborn.

LIST OF MEMBERS.

ADDITIONS.

BRENNAN, FRED S.	70 Oxford St., Somerville, Mass.
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SMITH, MERRITT, P.	Mass. Inst. Technology, Cambridge, Mass.
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TUCKER, H. F.	753 Boylston St. North, Seattle, Wash.
WARREN, HENRY E.	Leicester, Mass.

NOTE FROM THE FEDERATED AMERICAN ENGINEERING SOCIETIES.

At its meeting held in Washington, D. C., September 30, 1921, the Executive Board of American Engineering Council approved the Report of the Committee on Patents, which contained the following resolutions:

"Whereas, American Engineering Council, of The Federated American Engineering Societies, representing 43 000 engineers in member and affiliated societies, is strongly convinced of the importance of the Patent Office to the maintenance of the manufacturing and agricultural welfare and supremacy of the United States and is deeply concerned over the present precarious and inefficient condition of the Patent Office, the said American Engineering Council represents to Congress that, while the Patent Office was in a most serious condition in 1919, when the need of its relief was first brought to the attention of Congress, the work of the Patent Office has increased 67.6 per cent. since that time, while the Patent Office force has only been increased 5.4 per cent., the salaries of examiners remaining at but 10 per cent. more than they were in 1848, and the resignations of the Patent Office examiners have continued in increasing volume until but one half of the examining force now consists of properly trained examiners; and

"Whereas, the Lampert Patent Office Bill, H.R. 7077, provides the least increases in force and salaries which can possibly stop the retrogression of the Patent Office and enable it to make progress toward recovering an efficient condition, and by increases in the fees for patents, provides the funds necessary to enable the Patent Office to continue to be self-supporting;

"Now, therefore, AMERICAN ENGINEERING COUNCIL most urgently recommends to Congress the passage of said Lampert Patent Office Bill, H.R. 7077."

Your committee also recommends that a copy of the foregoing resolution be sent by you to each member of Congress and to each of the societies which is a member of The Federated American Engineering Societies or is affiliated therewith, with the request that it be published in the journal of such society, or otherwise called to the attention of its membership, and that each member of such society be requested to communicate with his Senators and personal Representatives, urging the immediate enactment of the Lampert Patent Office Bill.

LIBRARY NOTES.

RECENT ADDITIONS TO THE LIBRARY.

U. S. Government Reports.

Water Supply Paper 450.

Annual Report, Statistics of Express Companies. 1920.

State Reports.

Wisconsin. Wisconsin Survey. Bulletins 55 and 58.

Municipal Reports.

Boston, Mass. Annual Report Transit Department. 1920.

Lynn, Mass. Annual Report Commissioner Water Supply.

1920.

Medford, Mass. Annual Report Water and Sewer Commissioners. 1920.

New York, N. Y. Annual Report Bureau of Buildings.

1920.

St. Louis, Mo. Annual Report Water Commissioner. 1920.

Miscellaneous.

Education of Health Officers. George C. Whipple.

Method of Least Squares. Mansfield Merriman.

Transactions of American Inst. Min. & Met. Engrs. Vol. 64.

Tentative Standards American Society for Testing Materials.

1921.

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PAPERS AND DISCUSSIONS

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FEDERAL WATER-POWER LEGISLATION.

BY GEO. C. DANFORTH,* MEMBER BOSTON SOCIETY OF CIVIL ENGINEERS.

(Presented October 19, 1921.)

CONSIDERING the extent of our water resources, it is surprising that of our present power development exceeding 70 million horse power only 8 million, or about 10 per cent., is water. This failure to substitute a non-exhaustible resource for an exhaustible one is due partly to the fact that electric transmission was made available after many of our industries and railroads had been established on a coal-burning basis. A more important reason, however, is that water power, with an initial cost of development from two to five times that of steam, has been subject to many restrictions that steam power has not, and there is a greater financial risk in its development. In the matter of federal legislation, the government has consistently maintained a policy of restriction and control rather than of encouragement. The history of federal legislation dates from the Act of September 1, 1890 (26 Stat. 426), which provided that no bridge, breakwater, pier or abutment could be constructed beyond the harbor lines where established, and where they were not established such obstructions could not be made without the previous consent of the Secretary of War.

The Act of July 13, 1892 (27 Stat. 88), relates to the construction of wharves, piers and bridges over navigable waters,

*Chief Engineer, Maine Water Power Commission, Augusta, Me.

and requires the approval of the Secretary of War for an improvement or bridge. The Act of March 3, 1899 (30 Stat. 1121), required the consent of Congress for placing obstructions in navigable waters, and where such obstructions were in intrastate waters the Secretary of War and chief of engineers had to pass on the plans, notwithstanding authorization by the state legislature.

The next legislation was the so-called "General Dam Act" of June 21, 1906 (34 Stat. 386). This required the consent of Congress before a dam could be constructed in navigable waters, and the approval of the specifications, plans and location by the chief of engineers and Secretary of War. It also required the construction and operation of such locks and fishways as were deemed necessary. Two special acts passed under this Act in 1908 led to the vetoes of President Roosevelt, with the statement that no bills would be signed which did not provide a fixed charge and a limitation in time of the rights conferred. The Act of June 23, 1910 (36 Stat. 593), is amendatory of the preceding act and lays down many important rules and regulations for the construction of dams in navigable rivers.

Since 1910, Congress has been attempting to obtain legislation which would safeguard public interest without discouraging investment. The Ferris law which passed the House in 1914, providing for development on the public domain, failed of passage, as did a similar bill passed by the House in 1916; the Adamson bill, providing for construction of dams on navigable waters, which passed the House in 1914, and a like bill passed in 1916, had no better success. Each contained the provisions demanded by President Roosevelt, but were defeated in the Senate on the ground that Congress had no right to exact a charge for development of water power, and, in particular, for development on navigable waters.

The war, with its shortage of coal and oil, again drew attention to the need of legislation. A bill was submitted by President Wilson in December, 1917, but was killed in the last hours of the session by Senator LaFollette. The present bill (H.R. 3184), introduced by Representative Esch of Wisconsin, and passed by the House July 1, 1919, was passed by the Senate with several drastic amendments January 15, 1920. It went to conference

January 17, and was reported out April 30, with an even more drastic definition of navigable waters, in spite of certain opposition we were able to bring before the committee, including the efforts of Senator Lodge of Massachusetts. It was signed by the President June 10, 1920, and became law.

Something over eighteen months ago I read this law, in particular the definition of navigable waters as it was amended immediately before being sent to the conference committee, and took it on myself to say it was not what the East wanted. This was in the face of some opposition, for I was advised from Washington to leave it alone, and one of our Maine Senators said it did not interfere with our waters. Our efforts brought no result beyond writing a few speeches into the Congressional Record of May, 1920. New England, however, as an economic unit, is probably as interested in power as any section of the country of equal area, and it is not yet time for us to lose interest in legislation which affects us as much as this does. And all sections of the United States where power is privately owned have the same interest. Contrary to some expectations, I think we will find considerable resentment in the West at this further extension of bureaucratic control, — government in business. They have already had some experience with that control, and a prominent man in Colorado recently suggested that "now we are getting a dose of our own medicine, and it is possible that some of our business interests may wake up to its dangers."

A letter recently sent to the various state commissions has brought almost uniformly replies stating that they believed waters not actually navigable in fact should be exempt from federal control. New York State, which refused to help change the law before it was passed, is already taking this question of jurisdiction to the Supreme Court. North Carolina is preparing amendments in line with our proposals of eighteen months ago. The Water Power League of America, at a convention in New York on June 23 and 24, called because of dissatisfaction at the present Act, has created a committee of which the writer is a member, for the purpose of suggesting amendments; and it is a significant fact that the manufacturer who is perhaps most vitally

interested in power production and costs is adequately represented on that committee.

The Federal Power Commission is composed of the Secretaries of War, Interior and Agriculture. Mr. O. C. Merrill, formerly chief engineer of the Forest Service, was appointed executive secretary, and Lieut.-Col. William Kelly, Corps of Engineers, U. S. Army, was detailed as engineer officer. The Act provides that the work of the commission shall be carried on by personnel of the three departments.

The commission has power to issue licenses or preliminary permits for water-power developments on navigable streams (Sec. 4). Licenses are issued for not to exceed fifty years (Sec. 6). The right of eminent domain may be invoked for any power site (Sec. 21) and the plant may be taken over by the Government at the expiration of the license, at its net investment value (Sec. 14), or the license may be reissued to the same or another applicant. (Sec. 15).

If taken over by the Government or another licensee, going value or prospective revenue are not considered as net investment, and values allowed for water rights, rights of way, lands, etc., are not to be in excess of actual reasonable cost thereof at time of *acquisition* (Sec. 14).

Annual charges are to be paid to the United States, to cover cost of administering the Act, and excessive profits are to be expropriated (Sec. 10e). Adequate depreciation reserves are to be maintained (Sec. 10c), and a state commission, if there be such, or the Federal Commission, shall regulate rates and service of public utilities. There is also provided in Sec. 10d that after twenty years a percentage of earnings over and above a fair return shall go into an amortization fund, with the further interesting provision that this is to be applied in reducing the net investment.

Sec. 11b gives the right to compel any licensee to give, free of charge, land, structures and power which may be required for navigation purposes, and Sec. 12 provides for navigation structures included in the works when built.

Secs. 19 and 20 provide for regulation of rates and service.

Secs. 4 and 7 provide for certain coöperation with the states, and Secs. 9 and 27 for a non-interference with state laws.

Sec. 10^f provides that head-water development costs can be charged to beneficiaries below. This would include extra as well as intrastate developments on interstate streams.

It may be well here to comment on the difference between waters which are navigable in fact and navigable waters of the United States as the term is legally defined.

The definition in the Act as finally passed is as follows:

“ ‘ Navigable waters ’ means those parts of streams or other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several states, and which either in their natural or improved condition notwithstanding interruptions between the navigable parts of such streams or waters by falls, shallows, or rapids compelling land carriage, are used or suitable for use for the transportation of persons or property in interstate or foreign commerce, including therein all such interrupting falls, shallows, or rapids; together with such other parts of streams as shall have been authorized by Congress for improvement by the United States or shall have been recommended to Congress for such improvement after investigation under its authority.”

From many court decisions which I have available on the definition of navigable waters I quote the following:

“ Rivers are navigable waters of the United States when they form in their ordinary condition by themselves a continued highway over which commerce is or may be carried on with other states or foreign countries in the customary modes in which such commerce is conducted by water.” (The *Daniel Ball*; 10 Wall. 557 [1870].)

“ Such waters entirely within the limits of a state are subject to the same control of the federal government as those extending through or reaching beyond the limits of a state.” (101 Min. 197; 112 N. W. 395.)

“ The construction of a dam in a river at a point where it is not navigable which so retards the flow of water as to affect the navigability at a point where it was navigable before is prohibited.” (U. S. v. *Rio Grande Dam & Irrigation Co.*, 174 U. S. 690 [1899].)

“ Navigability in the sense of the law is not destroyed because the water course is interrupted by occasional natural obstructions or portages; nor need the navigation be open at all seasons of the year or at all stages of the water. . . . The *Desplaines River* has been out of use for a hundred years but . . . improvements in the

methods of water transportation . . . may restore the usefulness of this stream, and it is not difficult to believe that many other streams are in like condition. If they are to be abandoned it is for Congress, not the Courts, so to declare." (*Economy Light & Power Co. v. U. S.*, Adv. Ops. 487, April, 1921, in the case of a river which had been used by traders and explorers previous to 1825.)

"In the absence of federal statute a state may by statute authorize the erection of a dam across a navigable river within its limits." (199 U. S. 473.)

"The unquestioned rule of the common law was that every riparian owner was entitled to the continued natural flow of the stream. . . . Although this power of changing the common-law rule as to streams within its dominion undoubtedly belongs to each state, yet two limitations must be recognized. First, that in the absence of specific authority from Congress a state cannot by its legislation destroy the right of the United States, as the owner of lands bordering on a stream, to the continued flow of its water; so far, at least, as may be necessary for the beneficial uses of the government property. Second, that it is limited by the superior power of the General Government to secure the uninterrupted navigability of all navigable streams within the limits of the United States. . . .

. . . It does not follow that the Courts would be justified in sustaining any proceeding by the Attorney-General to restrain any appropriation of the upper waters of a navigable stream. The question always is one of fact, whether such appropriation substantially interferes with the navigable capacity within the limits where navigation is a recognized fact. . . ." (*U. S. v. Rio Grande Dam & Irrigation Co.*, 174 U. S. 690.)

"The servitude to the interests of navigation of privately owned lands forming the banks and bed of a stream is a natural servitude, confined to such streams as in their ordinary and natural condition are susceptible of valuable public use in navigation, and confined to the natural conditions of such streams.

"The power of the federal government to improve navigable streams in the interests of interstate and foreign commerce must be exercised when private property is taken, in subordination to the Fifth Amendment." (*U. S. v. Cress*, 243 U. S. 316 [1916].)

"The power of the Congress extends to the whole expanse of a navigable stream and is not dependent upon the depth or shallowness of the water.

"The judgment of Congress as to whether a construction in or over a river is or is not an obstacle or hindrance to navigation is an exercise of legislative power in respect to a matter wholly within its control and is conclusive." (*U. S. v. Chandler Dunbar Co.*, 229 U. S. 269; 208 Fed. Rep. [1915].)

There would seem to be no question but that the Congress under the commerce clause of the Constitution has power over navigable waters for the purpose of conserving commerce among the several states and with foreign nations, and we assume that this control goes to the headwaters of our rivers. It is a different thing, however, to grant to Congress under the camouflage of the commerce clause of the Constitution the right to regulate all our streams for the power purposes or to give to a commission the right to destroy navigation as it may do under Section 12 of the Act. As a matter of fact, it is not possible to erect a headwater dam without improvement to navigation unless there is such actual diversion of the water as occurs where it is used for irrigation. The commission may refuse to permit a project which will improve navigation with the same facility with which it can destroy navigation in the actually navigable sections.

The original colonies were all sovereign states, and they surrender to the federal government only the right to control navigation in navigable waters. Other rights in their streams and waters were not surrendered, but reserved.

We have, however, to do with the Act itself until such time as the Courts may pass on its constitutionality.

Mr. M. O. Leighton, formerly chief hydrographer, U. S. Geological Survey, in testifying before the Congressional Water Power Committee in 1920, stated:

"By Section 9 of the Act of March 3, 1899, Congress asserted its control over all structures that affect the navigable waters of the United States. It is conceivable that under some conditions that control may extend to the uttermost sources of streams that are or *are declared to be* navigable in their lower reaches."

Recently the Judge Advocate-General of the Army, General Crowder, has been quoted as stating that the commission had jurisdiction over the "ultimate raindrop." And there is every indication that the commission is to take all the authority which the law gives it.

It seems that the remedy at the present time is to limit the jurisdiction of the commission by amending the law, and there is more reason than is generally supposed to believe that this effort to amend may be successful.

A possible form of amendment, which is of course only tentative, is to draw a line in the definition of navigable waters which will limit federal control to waters which are navigable in fact, waters in which commerce occurs and merchandise is carried in both directions in some kind of a vessel, to cut out absolutely that navigability which comes from throwing logs into one end of a river at high water and letting them run out the other. The following is suggested:

" Navigable waters " means those parts of streams or other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several states, which either in their natural or improved condition are in fact commercially navigable by boats or other vessels, but not above the lowest interruption by falls, shallows, rapids, or lawfully existing obstructions compelling land carriage, together with such other parts of streams as have been authorized by Congress for improvement by the United States for the carriage of freight or passengers, and all waters on the public lands of the United States.

This would eliminate one present trouble with the law, — that of not knowing whether a proposed development is under the jurisdiction of the commission or not, and having the alternative of either applying to the commission under Section 23 for a decision, which they will give at their convenience, or of going ahead without a license and being liable to the federal government for obstructing navigable waters of the United States and in addition guilty of a misdemeanor, to be punished as provided in Section 25 of the Act.

There is a provision in the United States Constitution, and in most state constitutions, usually to be found in the declaration of rights, that private property shall not be taken for public use without just compensation nor unless the public exigencies require it. Section 21 of this Act grants the right of eminent domain for obtaining sites licensed by the commission. Is this right of eminent domain to be applied regardless of whether the use to which this property is to be applied is a public or a private one? That question has been before the courts many times, and these court decisions have, I think, drawn a fairly distinct line between public and private use.

The chief engineer of the Division of Waterways of the Department of Public Works of Illinois has called attention to a possibility in connection with Section 10f two projects being licensed on a stream and one of the applicants having unlicensed plants on the same stream sufficient to justify headwater storage developments. Under this section licensee No. 1 might be required to pay one half the cost of the annual charges for the reservoir sites, including depreciation, whereas licensee No. 2 might own 90 per cent. of the power on the stream, unassessable either because it was constructed previous to the enactment of the law or was on a section of the stream not considered by the commission to be under their jurisdiction. Such benefits as flood control, improvements of sanitary and navigation conditions could not be assessed, although playing an important part in the creation of storage reservoirs.

Section 11b provides that the licensee shall give, free of charge, land, structures, power, etc., for navigation purposes. Would this in a dam already constructed without locks be taking of private property for public uses without compensation?

The only interest the United States should have in the waters of navigable streams is that it shall have necessary water to maintain or improve navigation. It has no right to require the licensee to furnish power to operate navigation structures, and these requirements might be extensive. It is suggested that the word "water" be substituted for "power" in this section.

In Section 10c there is a provision that the licensee shall maintain the project works in a condition of repair adequate for the purposes of navigation. In connection with the definition of project (Section 3) this might seem to imply that the licensee must maintain all navigation structures, which might include canals, locks, dams, embankments, dry docks, etc., placing on him an obligation which he is unable to foresee at the time of his application for a license. This provision should be changed so that the expense of maintenance should be borne by the Government.

I do not know just what the argument is for state rights. There was a war in regard to that, some years ago. I think it might reasonably be expected, however, that we could get along with less bureaucratic control of business from Washington.

Section 14 of the bill has an interest. Many of the states have state control of public utilities. The right of the Government to take over and operate projects permits them to operate public utilities in any state in competition with the companies already operating in that state. Have recent experiences been such as to create a belief that governmental operation of private business is efficient or desirable?

And I doubt if it would be possible to do conservative financing during the last ten years of the license period. The license should be renewable on the conditions of the original license unless notice were given ten years or more before the expiration of the license that the project is to be taken over by federal or state authorities.

It also might be asked whether the Government were in the best position to decide whether a proposed development were that best adapted to "a comprehensive scheme of improvement," as provided in Section 10a, or if this could not be better planned locally.

Section 10d provides that after twenty years there shall be maintained from the surplus, over and above a reasonable return on the "actual legitimate investment," an amortization fund which will be applied to reducing the net investment. It would also reduce the amount to be paid by the Government or a new licensee if taken over under Section 14, as well as any earning capacity based on that investment. One might even foresee a time when that net investment would be zero and it could be taken over without cost. In other words, the power commission is vested with such powers that it could take over, maintain and operate any project "covered in whole or in part by the license" at the expiration of the lease, with the provision that it shall pay the net investment of the licensee in the project plus reasonable severance damages to property not taken. This is in addition to the right to take over at any time by condemnation and payment of just compensation. Should the project prove unprofitable, the licensee must maintain it during the life of the license. It is difficult to believe that these provisions are constitutional, and it seems probable that they will tend to deflect capital from water-power investment.

It would seem also to be desirable that this section should provide that the earnings of those public utilities whose rates are controlled by state public service commissions should be assumed to be not in excess of "a reasonable rate of return."

Section 15 provides for an annual license in case the project is not taken over by the Government or the license reissued to the same or another concern. It is not reasonable for any corporation to work on an annual extension of lease, and it is believed that this period should be increased to at least five years.

Section 23 states the Act does not affect any permit or valid existing right of way heretofore granted. This can refer to federal permits only.

I am not in a position to comment in detail on the accounting system provided by the federal commission. A number of the items might be changed somewhat — in particular, Accounts 240 Depreciation Reserves and 301 Organization; — certain others should be eliminated as unnecessary or placed in a different section.

Many statements have been made to the effect that depreciation expenditures should go into the operating account and not into reserves which, estimated in advance, may far exceed the requirements of depreciation.

I am inclined to agree with a contention already made that a total elimination of the accounting system would be desirable, substituting therefor the filing of a report as made to the public utilities commissions of the various states.

A further objection is due to the amount of power given the commission in promulgating rules and regulations and in providing for coöperation with the states. Not only will a changing personnel bring changes in these rules and regulations but changes in the interpretation of the Act itself.

If this government bureau is to function properly it should be as far removed as possible from political influences and the inevitable results of control by a commission which goes out of office every four years and cannot but reflect the policies of the administration to which it belongs. And it will usually be the case that the duties of their respective departments will be so great that the commissioners will have little time to spare for

proper supervision. The commission should be abolished as a separate bureau and placed under one of the departments for administrative purposes, either the War Department or the proposed Department of Public Works, with personnel and policies which would be relatively permanent, or it should be freed entirely from departmental jurisdiction.

Sections 9*b* and 27 of the Act provide that it shall in no way interfere with state laws. The line drawn here is too vague to be satisfactory. While suitable state legislation might limit much harm that could be done, it would increase the existing restrictions rather than lessen them. The logical procedure is to limit the jurisdiction of the federal commission by amending the definition of navigable waters as applied to this Act. This amendment will not restrict development. It will not interfere with the public lands, and it will remove much of the privately owned power from federal control. Whatever removal of federal red-tape and restrictions can be effected must act as an incentive to development.

If the federal law cannot be amended, state legislation would probably be desirable, varying with the locality. New York has already passed a license law modeled somewhat after the federal law. Methods of accounting may be prescribed by state law, as also regulation of rates and service and expropriation of excess profits. It seems probable that the exercise of the right of eminent domain could also be controlled by the state, as there appears to be no reason why state legislation requiring certain methods in connection with condemnation proceedings would not be controlling.

The following court decision is of interest:

"But the federal Courts cannot take judicial notice that a stream is navigable because of an apparently irregular traffic in times of high water, employing Indian canoes and small steamboats and gasoline launches in face of a declaration by the legislature that such stream is not navigable." (33 Sup. Ct. 1024; 228 U. S. 708.)

At the present time there seems to be some relaxation of the strictness with which the jurisdiction of the commission may be asserted, and it is possible that the matter of jurisdiction over

certain rivers could be better settled now under the provisions of Section 23 than later if the parties interested should make application under that section for a ruling as to whether certain sites were under the jurisdiction of the commission. If the ruling were affirmative, the applicant would be no worse off than before. If negative, no future commission could reverse the ruling under the present law, and a valuable precedent would have been obtained in regard to other sites on the same river.

It may be of interest here to quote from the Congressional Record of June 24, 1921, statements of two eminent senators who have had much to do with the Act of 1920. Senator Jones of Washington, chairman of the committee on commerce, states:

"The commission has not acted as I had hoped it would act. It has acted as I feared it might. The time of Cabinet officers is so fully taken up with other things that they do not have the time to give the attention to this matter that it should have."

Senator Nelson of Minnesota stated:

"We finally succeeded in passing what I consider a most cumbersome and complicated general water-power bill. The law is so complicated that it has not been put in operation. I doubt whether the law will work satisfactorily or lead to that development of water power which we ought to have in this country. I am anxious to see the water powers of this country developed, but I fear that that law will act as a brake."

In closing I should like to say that the objection to certain details of this Act does not mean objection to the Act as a whole. It represents years of effort toward the framing of suitable legislation. The older laws left our water-power resources almost untouched, and we turned to coal and oil, which could be developed with fewer legal restrictions, with greater security to the investor, and in many cases at a lower cost. To-day not less than 85 per cent. of the power used in this country for domestic, public, industrial and railroad purposes is produced from coal and fuel oil. and while some individual steam-stations are highly efficient we have failed almost completely to realize the group efficiency of large systems and persisted in transporting steam power by rail as fuel, instead of over the wires as electrical energy. An average

load factor that might reasonably be as high as 50 per cent. remains at about 15 per cent. While power cannot be eliminated, the transportation of coal in bulk for power purposes should be. It seems as though the only way in which future power demands can be met is by the interconnection of tidewater coal stations and hydroelectric stations large enough to eliminate the waste of the isolated, low-efficiency plant. This federal legislation should be welcomed in so far as it is incentive to a development of an inexhaustible resource, conserving by just so much our exhaustible resources, coal and oil, and condemned for any interference it may place in the path of that development.

In the interest of that development it has seemed desirable to advance certain suggestions at the present time in regard to this law—in particular, amendments which limit the jurisdiction of the commission to waters that are commercially navigable by inserting a new definition of navigable waters; which place the commission in a position where its personnel and policies may be relatively permanent; and which make the accounting requirements reasonable. Other changes should be made, and the power of the commission to formulate such drastic regulations as those at present in force should be limited *in the law itself*. I feel, however, that if the definition of navigable waters can be suitably changed the greatest defect in the bill will have been remedied and lesser ones will have far less power for harm. If you want a governmental control of *commerce*, which is all the Government has a right to control, the definition must be changed. If you want control of *power*, the definition can stand as it is.

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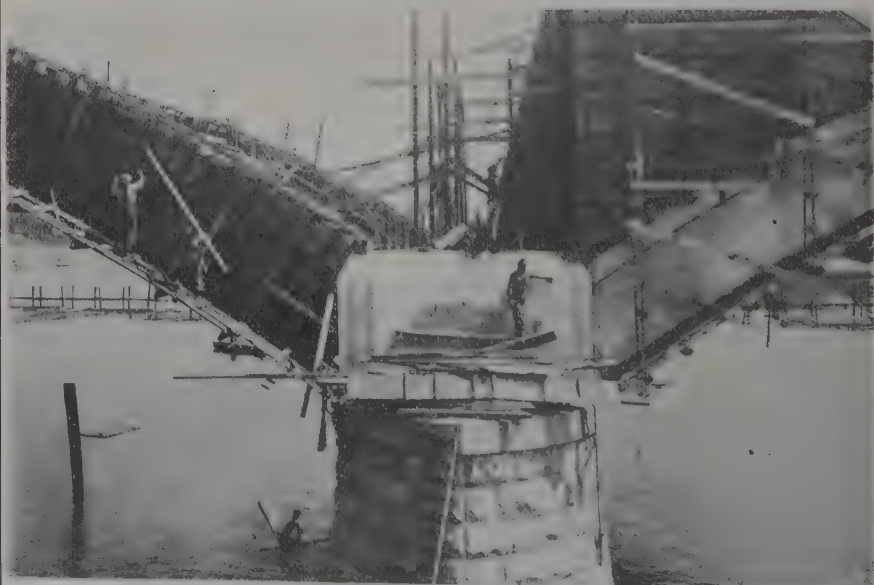
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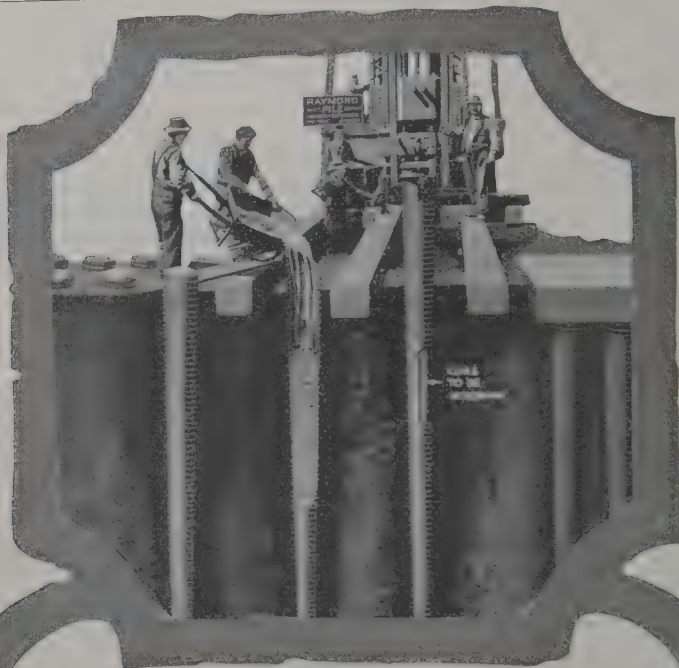
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